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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHEN, TIANJIE

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 06/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/938,611

Applicant(s)

FUNAYAMA ET AL.

Examiner

Tianjie Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 9 and 11-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-19 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8 6) ☐ Other:

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Non-Final Rejection

Election/Restrictions

1. Applicant's election with traverse of Species I claims 1-8 and 10 in Paper No. 11 filed 05/20/2003 is acknowledged. The traversal is on the ground(s): "it would not place a serious burden on the Examiner." This is not found persuasive because the restriction requirement is to elect a species. "When there is no disclosure of relationship between species (see MPEP § 806.04(b)), they are independent invention and election of one invention following a requirement for restriction is mandatory" (see MPEP § 808.01(a)). Furthermore, the claims includes a magnetic reproducing head in claim 1 and a magnetic recording head in claim 11, searching for these two completely distinctive magnetic heads would place a serious burden on Examiner.

The requirement is still deemed proper and is therefore made FINAL.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical

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Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-4, 6-8, 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Hayashi et al (US 6,490,139).

With regard to claim 1, Hayashi et al shows a magnetic reproducing head in Figs. 16-20 having a magnetic gap 48 at a medium-facing surface ABS, including a pair of magnetic yokes 41 and 50 of ferromagnetic material (Column 32, line 41 and column 33, lines 18-21), magnetic yoke 50 having a magnetic tip E (Fig. 18; column 24, line 46-48) at the medium-facing surface and a rear portion H (Fig. 18; column 24, lines 49-51) recessed from the medium-facing surface and magnetically coupled to the magnetic tip E, the magnetic tip having a first width in a track width direction at the medium-facing surface (the width of E in Fig. 18), the rear portion having a second width in the track width direction (the width of H in Fig. 18), and the second width being wider than the first width, a magneto-resistance effect film 45 (Fig. 17C; column 23, line 8) recessed from the medium-facing surface, and magnetically coupled to the pair of magnetic yokes of ferromagnetic material, and a pair of biasing films 46 (Figs. 16 and 18; column 23, lines 8-9) recessed from the medium-facing surface, the pair of biasing films including a hard magnetic material layer CoCrTa (Column 33, lines 7-8) disposed at B and G adjacent to the rear portion H (Fig. 18; column 24, lines 38-40).

With regard to claim 2, Hayashi et al further shows each of the pair of magnetic yokes of ferromagnetic material comprises a front surface parallel to the medium-

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facing surface and a rear surface parallel to the medium-facing and front surfaces, and wherein the magneto-resistance effect film has a film surface parallel to the rear surfaces (Fig. 16C).

With regard to claim 3, Hayashi et al further shows the magneto resistance effect film 45 is disposed between the pair of magnetic yokes 41 and 50 of ferromagnetic material and recessed from the medium-facing surface ABS (Fig. 17C).

With regard to claim 4, Hayashi et al further shows the magnetic tip and rear portion comprise a continuously formed ferromagnetic material body (Figs. 17C and 18).

With regard to claim 6, Hayashi et al further shows a pair of electrodes 43 and 47 (Fig. 17C; column 23, lines 9 and 20-22), one of the pair of electrodes 43 being coupled to a lower film surface of the magneto resistance effect element 45 and another one 47 of the pair of electrodes being coupled to an upper film surface of the magneto resistance effect element.

With regard to claim 7, Hayashi et al further shows the one of the pair of magnetic biasing films comprises the hard magnetic material layer and the hard magnetic material layer is disposed in contact with a side surface of the rear portion of the magnetic yoke at the interface between B and H (Fig. 18).

With regard to claim 8, Hayashi et al further shows the side surface of the rear portion 50 is tapered (Fig. 17C).

With regard to claim 10, as described above, Hayashi et al show a magnetic reproducing apparatus for reproducing magnetic information recorded on a magnetic medium, including a magnetic reproducing head having a, magnetic gap at a medium-facing surface, including a pair of magnetic yokes of ferromagnetic material,

one of the pair of magnetic yokes having a magnetic tip at the medium-facing surface and a rear portion recessed from the medium-facing surface and magnetically coupled to the magnetic tip, the magnetic tip having a first width in a track width direction at the medium-facing surface, the rear portion having a second width in the track width direction, and the second width being wider than the first width, a magneto resistance effect film recessed from the medium-facing surface, and magnetically coupled to the pair of magnetic yokes of ferromagnetic material, and a pair of biasing films recessed from the medium-facing surface, one of the pair of biasing films including a hard magnetic material layer disposed adjacent to the rear portion.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al in view of Sasaki et al (US 6,577,475).

Hayashi et al shows a magnetic reproducing head as described above, but does not show magnetic tip is discrete from the rear portion.

Sasaki et al shows a magnetic head wherein a magnetic tip 8b is discrete from the rear portion 8a (Figs. 2A and 6A).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to make magnetic tip be discrete from the rear portion. The

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rationale is as follows: Sasaki et al teaches the step of fabrication is: form the portion 8a first, then flatten the surface, finally tip 8b is finally formed on 8a; and such procedure makes a flat surface for rest portion of 8a (Column 8, line 66 to column 9, line 6). One of ordinary skill in the art would have been motivated by Sasaki et al's teaching to make the tip be discrete from the rear portion, thus obtaining a flat region on the rear portion.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 006437949B1 to Macken et al shows that CoCrTa is hard magnetic material.

US 20020039264A1 to Ohsawa et al shows a bias layer, owned by the same.

US 20010026423A1 to Arai et al shows a bias layer.

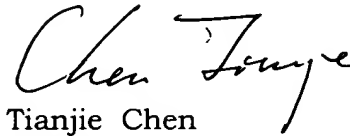
US 20020036873A1 to Hara et al shows a bias layer, owned by the same.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is (703) 305-7499. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (703) 305-9687. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-6037 for regular communications and (703) 872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

A handwritten signature in cursive script, appearing to read "Chen Tianjie".

Tianjie Chen
Examiner
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June 12, 2003